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REMOVABLE AUGMENT FOR MEDICAL IMPLANT

CROSS REFERENCE TO RELATED APPLICATIONS

This is a non-provisional application based upon U.S. Provisional Patent Application Ser. No. 61/787,598, entitled "POROUS ORTHOPAEDIC AUGMENTS", filed Mar. 15, 2013, which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to medical implants, and, more particularly, to medical implants with a bone in-growth surface.

2. Description of the Related Art

Orthopaedic implants are medical devices used for replacing or providing for stabilization and fixation of a bone or for replacement of articulating surfaces of a joint. The need for surgery requiring the implantation of such a medical device is usually the result of osteoarthritis, also known as degenerative joint disease, or injury. In the past, such orthopaedic implants have been formed of a solid, biocompatible material, which have been utilized with the goal of giving the patient an improved quality of life with reduced pain and inflammation, as well as increased stability, mobility and directed flexibility. Additionally, orthopaedic implants are known which have a rigidly attached, hard porous surface, which allows for minimal tissue ingrowth. Further, with each successive orthopaedic surgery, more and more of the natural bone is often removed.

What is needed in the art is a medical implant which improves stabilization of the implant through bone ingrowth over time and which reduces the amount of natural bone which must be removed during the course of successive revision surgeries.

SUMMARY OF THE INVENTION

The present invention provides an orthopaedic augment including a porous material which is removably attached to a medical implant. The porous material provides a bone ingrowth surface for interfacing with an existing bone material.

The present invention further provides an orthopaedic implant including a main body and a porous augment which is removably attached to the main body. The porous augment has a bone ingrowth surface for interfacing with a bone material. Another surface of the porous augment is coupled with the main body of the orthopaedic implant.

Additionally, the present invention provides a method of using the orthopaedic implant, which includes providing a main body, as well as a porous augment having a bone ingrowth surface. The main body is removably attached with another surface of the porous augment to form an orthopaedic implant. A portion of a bone is extracted from the body of a patient and, subsequently, the orthopaedic implant is implanted into the body of the patient. The porous augment is positioned such that a bone interfacing surface of the porous augment interfaces with a cut surface of the bone from which the portion of bone is extracted to facilitate bone ingrowth into the porous augment.

An advantage of the present invention is that the present invention provides orthopaedic augments and implants that aid in the process of rebuilding bone by utilizing the porous

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surface to permit subsequent bone growth into the pores of the augment. The use of porous material, which permits bone ingrowth, provides a more reliable fixation and aids in rebuilding the bone in the event of a subsequent required revision surgery.

An additional advantage of the present invention is that during a subsequent revision surgery, the augment and ingrown bone can be cut through, instead of cutting through additional natural bone mass during the course of each successive surgery, as is the current practice. The present invention also provides for the provision of augments of different shapes and sizes such that the augment can be easily reconfigured or formed to meet a set of specific circumstances.

BRIEF DESCRIPTION OF THE DRAWINGS

The above-mentioned and other features and advantages of this invention, and the manner of attaining them, will become more apparent and the invention will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is an exploded view of a tibial tray with an augment according to the present invention;

FIG. 2 is an assembled perspective view of the tibial tray with the augment illustrated in FIG. 1;

FIG. 3 is an exploded view of femoral implant with a pair of posterior augments according to the present invention;

FIG. 4 is an assembled prospective view of the femoral implant with the pair of posterior augments illustrated in FIG. 3; and

FIG. 5 is a prospective view of a femoral implant with a distal augment according to the present invention.

Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrates embodiments of the invention and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, and more particularly to FIGS. 1 and 2, there is shown an orthopaedic implant 10, which generally includes a main body 12 and an orthopaedic augment 14.

The main body 12 is illustrated in FIGS. 1 and 2 as a tibial tray, however, it may be any conventional total or partial orthopaedic implant. The main body 12 is formed of a biocompatible material, for example, metals such as alumina, titanium and titanium alloys, tantalum and tantalum alloys, cobalt chrome alloys, stainless steel, as well as biocompatible polymers such as polyaryletherketone (PAEK) and polyetheretherketone (PEEK). Main body 12 may further include a rigidly attached, optional porous layer 16 on the bone facing side 18 of the main body 12. Porous layer 16 may be formed, for example, of beads, mesh, lattice, etc.

Orthopaedic augment 14 is formed of a porous material, and more particularly from any suitable clinically usable, biocompatible porous material. Exemplary materials include porous polymer materials including polyetheretherketone (PEEK), polymer scaffolds, allograft bone, autograft bone, easily cut metal scaffold, or other similar bone or tissue ingrowth surfaces. Orthopaedic augment 14 includes a porous ingrowth surface 20 for interfacing with existing bone material and another surface 22 for interfacing with a corresponding interface surface of the main body 12. Although only one orthopaedic augment 14 is shown in combination